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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,604	03/29/2004	Pierattilio Di Gregorio	6023-175US (BX2592M)	2819

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AKIN GUMP STRAUSS HAUER & FELD L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

BECK, DAVID THOMAS

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/811,604

Applicant(s)

GREGORIO, PIERATTILIO DI

Examiner

David T. Beck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Spath (6,189,354) and the applicant's own admission (specification, page 1, paragraph 0005).

With regard to claim 1, Benson et al disclose a known procedure for producing a planar thermo-insulating vacuum panel, (column 4, line 40-52) having an envelope (figure 15, number 82) comprising at least one multilayer sheet (column 8, lines 50-54) and containing at least one filler selected from the group consisting of inorganic powders and porous organic foams (column 16, lines 25-29). Benson et al further disclose that the panel can be curved into a cylinder, (column 9, lines 22-26 and Figure 18).

Benson et al disclose using at least one filler selected from the group consisting of inorganic powders and porous organic foams (column 16, lines 25-29), but do not expressly disclose that the powders and foams are included inside the vacuum envelope. Hunter teaches a bendable vacuum panel (column 8, lines 57-67) which contains at least one filler selected from the group consisting of inorganic powders and porous organic foams (column 9, lines 21-29). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a powder or foam as

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taught by Hunter in the panel taught by Benson et al. The motivation to do so would have been to increase the R value significantly (Hunter, column 9, lines 46-49).

Benson et al do not disclose the method by which the panel is curved, but do disclose that the panel may comprise metal sheets, (see column 4, line 8-17) and that the sheets may be bent (column 6, lines 48-54). Attention is drawn to Spath, which discloses a method for curving hollow metal sheets (column 1, lines 6-8) through calendaring by using two rollers and a third element (a roller) of equal length placed parallel to the two rollers, (see Figure 1). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to curve the panels taught by Benson et al using the method taught by Spath. The motivation to do so would have been to produce a curved hollow metal sheet so that the hollow section is protected against bulges, nicks or against any other kind of deformation (Spath, column 1, lines 56-63).

Benson et al do not expressly disclose that the vacuum panel comprises at least one metal sheet having a thickness not greater than 100 μm . Applicant's admission discloses that envelopes made of barrier sheets of thickness generally not greater than 100 μm are known in the art (specification, page 1, paragraph 005). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to assemble and curve a vacuum panel as taught by Benson et al in view of Yamashita et al having a barrier sheet of less than 100 μm thickness. The motivation to do so would have been to create a high-performance insulation material occupying less volume that is therefore more valuable (Benson et al, column 12, lines 12-14).

With regard to claim 2, Spath teaches the calendaring operation is carried out by passing the planar vacuum panel between at least two rollers and a third element of length equal at least to a length of the two rollers and having a position parallel to the two rollers (Figure 1, number 27).

With regard to claim 3, Spath teaches the third element is a third roller (Figure 1, number 27).

With regard to claim 4, Benson et al teach the thickness of the vacuum panel may be 2.5 mm thick (column 11, lines 49-55), which is less than the claimed 20 mm. Hunter teaches that the filling material may be rigid polyurethane foam (column 9, line 24),

With regard to claim 7, Spath also discloses a method for curving metal panels through calendaring by using two rollers and a third element of equal length placed parallel to the two rollers where the position of the third element (a roller) is continuously modified during the calendaring operation, (column 8, lines 62-67).

With regard to claim 12, Benson et al teach that the vacuum panel contains at least one getter material (column 4, lines 51-52).

With regard to claim 13, the applicant's specification teaches that it is known to produce a vacuum panel using a multilayer barrier sheet having at least one metal layer (specification, paragraph 0005). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to form the vacuum panel taught by Benson et al using a barrier sheet which is a multilayer sheet having at least one metal

layer. The motivation to do so would have been to confer a barrier effect and mechanical support and protection of the barrier layer (specification, paragraph 0005).

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Spath (6,189,354), the applicant's own admission (specification, page 1, paragraph 0005) and Nishimoto (6,336,693).

With regard to claim 5, the teachings of Benson et al in view of Hunter, Spath, and the applicant's own admission teach the invention of claim 4 as discussed above but do not expressly teach the vacuum panel is between 5 and 20 mm. Nishimoto discloses that it is known to construct vacuum panels using hard polyurethane foam having a thickness in a range of 10 to 20 mm (see column 3, lines 47-58). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to increase the thickness of the panel taught by Benson et al in view of Hunter, Spath, and the applicant's own admission to between 5 and 20 mm as taught by Nishimoto. The motivation to do so would have been to increase the insulating properties of the panel.

With regard to claim 6, Benson et al in view of Hunter, Spath, and the applicant's own admission teach the invention of claim 1 as discussed above and that the filler may be silica powder (column 9, lines 26-28) but do not expressly teach the vacuum panel is between 5 and 20 mm. Nishimoto discloses that it is known to construct vacuum panels having a thickness in a range of 10 to 20 mm (see column 3, lines 47-58). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to increase the thickness of the panel taught by Benson et al in view of Hunter, Spath, and

the applicant's own admission to between 5 and 20 mm as taught by Nishimoto. The motivation to do so would have been to increase the insulating properties of the panel.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benson et al (5,107,649) in view of Hunter (5,792,539), Spath (6,189,354), the applicant's own admission (specification, page 1, paragraph 0005), and Haase (4,011,357).

With regard to claim 8, Benson et al in view of Hunter, Spath, and the applicant's own admission teach the invention of claim 1 as discussed above. Furthermore, Benson et al also teach that spacer beads coated with a polystyrene or similar adhesive material are to be affixed to the wall sheets of the planar vacuum panel, (column 7, lines 9-14), thus necessarily creating at least a layer of polymeric adhesive on at least one surface of the panel. Benson teaches that the panel is subsequently bent, (column 7, lines 2-8). Benson et al does not expressly teach that the polystyrene layer is in a foam state. Haase discloses that polystyrene can be foamed (column 2, lines 47-56). Therefore, it can be reasoned that foamed polystyrene would be a similar adhesive material to polystyrene as disclosed by Benson. Furthermore, Benson recognizes that polystyrene has desirable insulating properties (column 7, lines 34-40) and the use of foamed polystyrene as adhesive would enhance the insulating properties of the vacuum panel as a whole. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have placed adhesive polymeric foam on at least one surface of a vacuum panel and to have curved the panel through calendaring for the reasons discussed above.

Response to Arguments

4. Applicant's arguments filed 5/25/05 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the combination of Yamashita and Benson et al have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to the fact that Benson et al does not teach that the foam or powder are inside the envelope with the vacuum have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that with regard to claim 8, the surface of the panel referred to is on the outside of the panel and not the inside. However, "office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure." In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Therefore, it is reasonable to interpret that the "surface" referred to in claim 8 could refer to an inside surface of the panel.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Beck whose telephone number is 571-272-2942. The examiner can normally be reached on Monday - Friday, 8AM - 5:30PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 517-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DTB
June 20, 2005

DTB



MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER